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Public reporting burden for this collection of information is estimated to average 45 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the FAR Secretariat (VRS), Office of Federal Acquisition Policy, GSA, Washington, DC 20405.

OMB NO.: 9000-0136 Expires: 09/30/98

1. CONTINUATION OF THE SF 1449 - SOLICITATION/CONTRACT/ORDER FOR COMMERCIAL ITEMS

A. Blocks 19 - 24 of the SF 1449 are completed as follows:

Item No.	Schedule of Supplies/Services	Quantity	Unit	Unit Price	Amount
0001	UV MASK ALIGNER IN ACCORDANCE WITH ATTACHMENT 1, SPECIFICATION	1	EA	\$	\$
0002	REPORTS AND DATA IN ACCORDANCE WITH EXHIBIT A	1	LO	NSP*	NSP*
0003	INSTALLATION IN ACCORDANCE WITH ATTACHMENT 1, SPECIFICATION, PARA. 1.2	1	LO	NSP*	NSP*
0004	TRAINING IN ACCORDANCE WITH ATTACHMENT 1, SPECIFICATION, PARA. 5.5	1	LO	NSP*	NSP*

^{*}NOT SEPARATELY PRICED

B. Block 25 of the SF 1449 is completed as shown on Page 3

2. ADDENDA TO FAR 52.212-4 CONTRACT TERMS AND CONDITIONS—COMMERCIAL ITEMS (MAY 1997)

A. REQUIRED DELIVERY OR PERIOD OF PERFORMANCE

The required delivery is as follows:

ITEM NO.	QUANTITY	WITHIN DAYS AFTER DATE
		OF CONTRACT AWARD
0001	1 EA	180
0002	1 LO	IN ACCORDANCE WITH THE DELIVERY
		SCHEDULE IN EXHIBIT A
0003	1 LO	201
0004	1 LO	201

RESERVED FOR ACCOUNTING AND APPRORIATION DATA (SEE BLOCK 25 OF OF THE SF1449)

B. AUTHORIZED GOVERNMENT REPRESENTATIVE

,Code,Telephone number *, is hereby designated the Authorized Government Representative for inspection and acceptance purposes.

*(To be filled in at time of award)

C. YEAR 2000 COMPLIANT INFORMATION TECHNOLOGY

Information technology delivered under this contract shall be Year 2000 compliant as defined at FAR 39.002. "Information technology" is defined at FAR 2.101

D. REQUIREMENTS FOR ON-SITE CONTRACTOR'S

For those portions of the work under this contract performed at any NRL site, the contractor shall comply with the requirements for On-Site Contractor's dated 02 February 1998 which are hereby incorporated by reference. The full text is available at http://heron.nrl.navy.mil/contracts/home.htm.

3. FAR 52.212-5 CONTRACT TERMS AND CONDITIONS REQUIRED TO IMPLEMENT STATUTES OR EXECUTIVE ORDERS--COMMERCIAL ITEMS (AUG 1996)

- (a) The Contractor agrees to comply with the following FAR clauses, which are incorporated in this contract by reference, to implement provisions of law or executive orders applicable to acquisitions of commercial items:
 - (1) 52.222-3, Convict Labor (E.O.11755); and
 - (2) 52.233-3, Protest after Award (31 U.S.C 3553).
- (b) The Contractor agrees to comply with the FAR clauses in this paragraph (b) which the contracting officer has indicated as being incorporated in this contract by reference to implement provisions of law or executive orders applicable to acquisitions of commercial items or components:

(Contracting Officer shall check as appropriate.)

(1)	52.203-6, Restrictions on Subcontractor Sales to the Government, with Alternate I (41 U.S.C.253g and 10 U.S.C.2402).
(2)	52.203-10, Price or Fee Adjustment for Illegal or Improper Activity (41 U.S.C.423).
(3)	52.219-8, Utilization of Small Business Concerns and Small Disadvantaged Business Concerns (15 U.S.C.637 (d)(2) and (3)).
(4)	52.219-9, Small, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan (15 U.S.C.637 (d)(4)).
(5)	52.219-14, Limitation on Subcontracting (15 U.S.C.637(a)(14)).
(6)	52.222-26, Equal Opportunity (E.O.11246).
(7)	52.222-35, Affirmative Action for Special Disabled and Vietnam Era Veterans (38 U.S.C.4212).
(8)	52.222-36, Affirmative Action for Handicapped Workers (29 U.S.C.793).
(9)	52.222-37, Employment Reports on Special Disabled Veterans and Veterans of the Vietnam Era (38 U.S.C.4212).
(10)	52.225-3, Buy American Act Supplies (41 U.S.C.10).
(11)	52.225-9, Buy American Act Trade Agreements Act Balance of Payments Program (41 U.S.C.10, 19 U.S.C.2501-2582).
(12)	[Reserved]
(13)	52.225-18, European Union Sanction for End Products (E.O.12849).
(14)	52.225-19, European Union Sanction for Services (E.O.12849).

	(15)	(i) 52.225-21, Buy American Act North American Free Trade Agreement Implementation Act Balance of Payments Program (41 U.S.C 10, Pub.L.103-187).
	(ii)	Alternate I of 52.225-21.
	(16)	52.239-1, Privacy or Security Safeguards (5 U.S.C.552a).
	(17)	52.247-64, Preference for Privately Owned U.SFlag Commercial Vessels (46 U.S.C.1241).
contra	ercial : ct by r	Contractor agrees to comply with the FAR clauses in this paragraph (c), applicable to services, which the Contracting Officer has indicated as being incorporated in this eference to implement provisions of law or executive orders applicable to acquisitions of tems or components:
		(Contracting Officer check as appropriate.)
	(1)	52.222-41, Service Contract Act of 1965, As Amended (41 U.S.C.351, et seq.).
	(2)	52.222-42, Statement of Equivalent Rates for Federal Hires (29 U.S.C.206 and 41 U.S.C.351, et seq.).
	(3)	52.222-43, Fair Labor Standards Act and Service Contract Act Price Adjustment (Multiple Year and Option Contracts) (29 U.S.C.206 and 41 U.S.C.351, et seq.).
	(4)	52.222-44, Fair Labor Standards Act and Service Contract Act - Price Adjustment (29 U.S.C.206 and 41 U.S.C.351, et seq.).
	(5)	52.222-47, SCA Minimum Wages and Fringe Benefits Applicable to Successor Contract Pursuant to Predecessor Contractor Collective Bargaining Agreement (CBA) (41 U.S.C.351, et seq.).
/ -I\	0	anticular Constal Eventination of Decord. The Contractor constants to comply with the

- (d) Comptroller General Examination of Record. The Contractor agrees to comply with the provisions of this paragraph (d) if this contract was awarded using other than sealed bid, is in excess of the simplified acquisition threshold, and does not contain the clause at 52.215-2, Audit and Records -- Negotiation.
- (1) The Comptroller General of the United States, or an authorized representative of the Comptroller General, shall have access to and right to examine any of the Contractor's directly pertinent records involving transactions related to this contract.
- (2) The Contractor shall make available at its offices at all reasonable times the records, materials, and other evidence for examination, audit, or reproduction, until 3 years after final payment under this contract or for any shorter period specified in FAR Subpart 4.7, Contractor Records Retention, of the other clauses of this contract. If this contract is completely or partially terminated, the records relating to the work terminated shall be made available for 3 years after any resulting final termination settlement. Records relating to appeals under the disputes clause or to

litigation or the settlement of claims arising under or relating to this contract shall be made available until such appeals, litigation, or claims are finally resolved.

- (3) As used in this clause, records include books, documents, accounting procedures and practices, and other data, regardless of type and regardless of form. This does not require the Contractor to create or maintain any record that the Contractor does not maintain in the ordinary course of business or pursuant to a provision of law.
- (e) Notwithstanding the requirements of the clauses in paragraphs (a), (b), (c) or (d) of this clause, the Contractor is not required to include any FAR clause, other than those listed below (and as may be required by an addenda to this paragraph to establish the reasonableness of prices under Part 15), in a subcontract for commercial items or commercial components --
 - (1) 52.222-26, Equal Opportunity (E.O.11246);
- (2) 52.222-35, Affirmative Action for Special Disabled and Vietnam Era Veterans (38 U.S.C.2012(a));
 - (3) 52.222-36, Affirmative Action for Handicapped Workers (29 U.S.C.793); and
- (4) 52.247-64, Preference for Privately-Owned U.S.- Flagged Commercial Vessels (46 U.S.C.1241) (flow down not required for subcontracts awarded beginning May 1, 1996).

(End of clause)

4. 252.212-7001 -- CONTRACT TERMS AND CONDITIONS REQUIRED TO IMPLEMENT STATUTES OR EXECUTIVE ORDERS APPLICABLE TO DEFENSE ACQUISITIONS OF COMMERCIAL ITEMS. (MAR 1998)

(a)	The Contractor agrees to comply with the (DFARS) clause 252.247-7023, Transportation of
	Supplies by Sea, which is included in this contract by reference to implement 10 U.S.C.2631.

(b) The Contractor agrees to comply with any clause that is checked on the following list of DFARS clauses which, if checked, is included in this contract by reference to implement provisions of law or Executive Orders applicable to acquisitions of commercial items or components.

252.205-7000	U.S.C.2416).
252.206-7000	Domestic Source Restriction (10 U.S.C.2304).
252.219-7001	Notice of Partial Small Business Set-Aside with Preferential Consideration for Small Disadvantaged Business Concerns
(Alternate I)	(Section 9004, Pub.L.101-165 (10 U.S.C.2301 (repealed) note)).
252.219-7002 (Alternate I)	Notice of Small Disadvantaged Business Set- Aside (15 U.S.C.644).

	252.219-7003	Small Business and Small Disadvantaged Business Subcontracting Plan (DOD Contracts) (15 U.S.C.637).
	252.219-7005	Incentive for Subcontracting with Small Businesses, Small Disadvantaged Businesses, Historically Black Colleges and Universities
	(Alternate I)	and Minority Institutions (Section 9004, Pub.L.101-165 (10 U.S.C.2301 (repealed) note))
	252.225-7001	Buy American Act and Balance of Payment Program (41 U.S.C.10, E.O. 10582).
	252.225-7007	Trade Agreements (10 U.S.C.2501-2582).
	252.225-7012	Preference for Certain Domestic Commodities.
	252.225-7014	Preference for Domestic Specialty Metals (10 U.S.C.2241 note).
	252.225-7015	Preference for Domestic Hand or Measuring Tools (10 U.S.C.2241 note).
	252.225-7027	Restriction on Contingent Fees for Foreign Military Sales (22U.S.C.2779).
	252.225-7028	Exclusionary Policies and Practices of Foreign Governments (22 U.S.C.2755).
	252.225-7029	Restriction on Acquisition of Air Circuit Breakers (10 U.S.C.2534(a)(3)).
	252.225-7036	North American Free Trade Agreement Implementation Act.
	252.227-7015	Technical Data Commercial Items (10 U.S.C.2320).
	252.227-7037	Validation of Restrictive Markings on Technical Data (10 U.S.C.2321).
	252.247-7024	Notification of Transportation of Supplies by Sea (10 U.S.C.2631).
	252.249-7001	Notification of Substantial Impact on Employment (10 U.S.C.2501 note).
(c)	Required to Impleme the Contractor shall i	uses listed in paragraph (e) of the Contract Terms and Conditions ent Statutes or Executive Orders-Commercial Items clause of this contract, include the terms of the following clause, if applicable, in subcontracts for commercial components, awarded at any tier under this contract:
	252.225-7014	Preference for Domestic Specialty Metals, Alternate I (10 U.S.C.2241 note).
		(End of Clause)
\boxtimes	252.204-7004 F	Required Central Contractor Registration (MAR 1998)

5. ATTACHMENTS:

- Statement of Work/Specifications, Attachment No. 1
 Contract Data Requirements List, DD 1423, Exhibit A

6. ADDENDUM TO FAR 52.212-1 INSTRUCTIONS TO OFFERORS—COMMERCIAL ITEMS

(a). The Government intends to award a contract resulting from this solicitation to that responsible offeror proposing the lowest price for the Supplies or Services that has been determined to comply with the requirements of the solicitation.

7. FAR 52.212-3 OFFEROR REPRESENTATIONS AND CERTIFICATIONS COMMERCIAL ITEMS. (JAN 1997) (DEVIATION)

(a) Definitions. As used in this provision:

"Emerging small business" means a small business concern whose size is no greater than 50 percent of the numerical size standard for the standard industrial classification code designated.

"Small business concern" means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR Part 121 and size standards in this solicitation.

"Small disadvantaged business concern" means a small business concern that--

- (1) Is at least 51 percent unconditionally owned by one or more individuals who are both socially and economically disadvantaged, or a publicly owned business, having at least 51 percent of its stock unconditionally owned by one or more socially and economically disadvantaged individuals, and
- (2) Has its management and daily business controlled by one or more such individuals. This term also means a small business concern that is at least 51 percent unconditionally owned by an economically disadvantaged Indian tribe or Native Hawaiian organization, or a publicly owned business having at least 51 percent of its stock unconditionally owned by one or more of these entities, which has its management and daily business controlled by members of an economically disadvantaged Indian tribe or Native Hawaiian organization and which meets the requirements of 13 CFR Part 124.

"Women-owned small business concern" means a small business concern-

- (1) Which is at least 51 percent owned by one or more women or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and
- (2) Whose management and daily business operations are controlled by one or more women.

Women-owned business concern means a concern which is at least 51 percent owned by one or more women; or in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and whose management and daily business operations are controlled by one or more women.

(b) Taxpayer identification number (TIN) (26 U.S.C. 6050M). (1) Taxpayer Identification Number (TIN).
TIN: TIN has been applied for. TIN is not required because: Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the U.S. and does not have an office or place of business or a fiscal paying agent in the U.S.; Offeror is an agency or instrumentality of a foreign government; Offeror is an agency or instrumentality of a Federal, state, or local government; Other. State basis
(2) Corporate Status.
Corporation providing medical and health care services, or engaged in the billing and collecting of payments for such services; Other corporate entity; Not a corporate entity: Sole proprietorship Partnership Hospital or extended care facility described in 26 CFR 501(c)(3) that is exempt from
taxation under 26 CFR 501(a).
(3) Common Parent.
Offeror is not owned or controlled by a common parent.
Name and TIN of common parent: Name TIN
(c) Offerors must complete the following representations when the resulting contract is to be performed inside the United States, its territories or possessions, Puerto Rico, the Trust Territory of the Pacific Islands, or the District of Columbia. Check all that apply.
(1) Small business concern. The offeror represents as part of its offer that it \square is, \square is not a small business concern.
(2) Small disadvantaged business concern. The offeror represents that it \square is, \square is no a small disadvantaged business concern.

SOLICITATION NO. N00173-98-R-WC01 PAGE 11

(3) Women-owned small business concern. The offeror represents that it \square is, \square is not a women-owned small business concern.
NOTE: Complete paragraphs $(c)(4)$ and $(c)(5)$ only if this solicitation is expected to exceed the simplified acquisition threshold.
(4) Women-owned business concern. The offeror represents that it \square is \square is not, a women-owned business concern.
(5) Tie bid priority for labor surplus area concerns. If this is an invitation for bid, small business offerors may identify the labor surplus areas in which costs to be incurred on account of manufacturing or production (by offeror or first-tier subcontractors) amount to more than 50 percent of the contract price:
(6) Small Business Size for the Small Business Competitiveness Demonstration Program and for the Targeted Industry Categories under the Small Business Competitiveness Demonstration Program. [Complete only if the offeror has represented itself to be a small business concern under the size standards for this solicitation.]
(i) (Complete only for solicitations indicated in an addendum as being set-aside for emerging small businesses in one of the four designated industry groups (DIGs).) The offeror represents as part of its offer that it \square is, \square is not an emerging small business.
(ii) (Complete only for solicitations indicated in an addendum as being for one of the targeted industry categories (TICs) or four designated industry groups (DIGs).) Offeror represents as follows:
(A) Offerors number of employees for the past 12 months (check the Employees column if size standard stated in the solicitation is expressed in terms of number of

employees); or

(B) Offerors average annual gross revenue for the last 3 fiscal years (check the Average Annual Gross Number of Revenues column if size standard stated in the solicitation is expressed in terms of annual receipts)

(Check one of the following):

NUMBER OF	AVERAGE ANNUAL GROSS		
EMPLOYEES	REVENUES		
50 or fewer	\$1 million or less		
<u></u>	\$1,000,001 - \$2 million		
101-250	\$2,000,001 - \$3.5 million		
251-500	33,500,001 - \$5 million		
501-750	\$5,000,001 - \$10 million		
751-1,000	\$10,000,001 - \$17 million		
Over 1,000	Over \$17 million		

(d) Certifications and representations required to implement provisions of Executive Order 11246--

(1) Previous Contracts and Compliance. The offeror represents that
(i) It has, has not, participated in a previous contract or subcontract subject either to the Equal Opportunity clause of this solicitation, the clause originally contained in Section 310 of Executive Order 10925, or the clause contained in Section 201 of Executive Order 11114; and
(ii) It ☐ has, ☐ has not, filed all required compliance reports.
(2) Affirmative Action Compliance. The offeror represents that
(i) It ☐ has developed and has on file, ☐ has not developed and does not have or file, at each establishment, affirmative action programs required by rules and regulations of the Secretary of Labor (41 CFR Subparts 60-1 and 60-2), or
(ii) It ☐ has not previously had contracts subject to the written affirmative action programs requirement of the rules and regulations of the Secretary of Labor.
Cartification Describing Doumants to Influence Fodoral Transactions (21 11 C.C. 1252)

(e) Certification Regarding Payments to Influence Federal Transactions (31 U.S.C. 1352). (Applies only if the contract is expected to exceed \$100,000.) By submission of its offer, the offeror certifies to the best of its knowledge and belief that no Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress or an employee of a Member of Congress on his or her behalf in connection with the award of any resultant contract.

(f)	Buy American ActTrade AgreementsBalance of Payments Program Certificate.
(Applies	only if FAR clause 52.225-9, Buy American ActTrade AgreementBalance of Payments
Program	, is included in this solicitation.)

(1) The offeror hereby certifies that each end product, except those listed in paragraph
(f)(2) of this provision, is a domestic end product (as defined in the clause entitled Buy American Ac
-Trade Agreements Balance of Payments Program) and that components of unknown origin have
been considered to have been mined, produced, or manufactured outside the United States, a
designated country, a North American Free Trade Agreement (NAFTA) country, or a Caribbean
Basin country, as defined in section 25.401 of the Federal Acquisition Regulation.

(2)	Excluded	End	Products:
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LINE ITEM NO.	COUNTRY OR ORIGIN

(3) Offers will be evaluated by giving certain preferences to domestic end products, designated country end products, NAFTA country end products, and Caribbean Basin country end products over other end products. In order to obtain these preferences in the evaluation of each excluded end product listed in paragraph (f)(2) of this provision, offerors must identify and certify below those excluded end products that are designated or NAFTA country end products, or Caribbean Basin country end products. Products that are not identified and certified below will not be deemed designated country end products, NAFTA country end products, or Caribbean Basin country end products. Offerors must certify by inserting the applicable line item numbers in the following:

(i) The offeror certifies that the following supplies qualify as designated of country end products as those terms are defined in the clause entitled Buy Ar Trade AgreementsBalance of Payments Program:	
(Insert line item numbers)	
(ii) The offeror certifies that the following supplies qualify as Caribbean E end products as that term is defined in the clause entitled Buy American Act-AgreementsBalance of Payments Program:	•

(Insert line item numbers)

- (4) Offers will be evaluated in accordance with FAR Part 25.
- (g)(1) Buy American Act--North American Free Trade Agreement Implementation Act--Balance of Payments Program. (Applies only if FAR clause 52.225-21, Buy American Act--North American Free Trade Agreement Implementation Act--Balance of Payments Program, is included in this solicitation.)
 - (i) Each end product being offered, except those listed in paragraph (g)(1)(ii) of this provision, is a domestic end product (as defined in the clause entitled Buy American Act-North American Free Trade Agreement Implementation Act-Balance of Payments Program." Components of unknown origin have been considered to have been mined, produced, or manufactured outside the United States.

(ii) Excluded End Products:

LINE ITEM NO.	COUNTRY OR ORIGIN	
(List as necessary)		

(iii) Offers will be evaluated by giving certain preferences to domestic end products or NAFTA country end products over other end products. In order to obtain these preferences in the evaluation of each excluded end product listed in paragraph (g)(1)(ii) of this provision, offerors must identify below those excluded end products that are NAFTA country end products. Products that are not identified below will not be deemed NAFTA country end products.

The following supplies qualify as NAFTA country end products as that term is defined in the clause entitled Buy American Act--North American Free Trade Agreement Implementation Act--Balance of Payments Program:

(Insert line item numbers)

(iv) Offers will be evaluated in accordance with FAR Part 25 of the Federal Acquisition Regulations. In addition, if the solicitation is for supplies for use outside of the United States, an evaluation factor of 50 percent will be applied to offers of end products that are not domestic or NAFTA country end products.

(2) Alternate I. If Alternate I to the clause at 52.225-21 is included in this solicitation, substitute the following paragraph (g)(1)(iii) for paragraph (g)(1)(iii) of this provision:
(g)(1)(iii) Offers will be evaluated by giving certain preferences to domestic end products or Canadian end products over other end products. In order to obtain these preferences in the evaluation of each excluded end product listed in paragraph (b) of this provision, offerors must identify below those excluded end products that are Canadian end products. Products that are not identified below will not be deemed Canadian end products.
The following supplies qualify as Canadian end products as that term is defined in the clause entitled Buy American ActNorth American Free Trade Agreement Implementation Act-Balance of Payments Program:
(Insert line item numbers)
(h) Certification Regarding Debarment, Suspension or Ineligibility for Award (Executive Order 12549). The offeror certifies, to the best of its knowledge and belief, that
(1) The offeror and/or any of its principals \square are, \square are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency, and
(2) Have, have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a Federal, state or local government contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and are, are not presently indicted for, or otherwise criminally or civilly charged by a Government entity with, commission of any of these offenses.

(End of Provision)

8. DFARS 252.212-7000 OFFEROR REPRESENTATIONS AND CERTIFICATIONS - COMMERCIAL ITEMS (NOV 1995)

(a) Definitions.

As used in this clause --

- (1) "Foreign person" means any person other than a United States person as defined in Section 16(2) of the Export Administration Act of 1979 (50 U.S.C. App. Sec 2415).
- "United States person" is defined in Section 16(2) of the Export Administration Act of 1979 and means any United States resident or national (other than an individual resident outside the United States and employed by other than a United States person), any domestic concern (including any permanent domestic establishment of any foreign concern), and any foreign subsidiary or affiliate (including any permanent foreign establishment) of any domestic concern which is controlled in fact by such domestic concern, as determined under regulations of the President.
- (b) Certification.

By submitting this offer, the Offeror, if a foreign person, company or entity, certifies that it--

- (1) Does not comply with the Secondary Arab Boycott of Israel; and
- (2) Is not taking or knowingly agreeing to take any action, with respect to the Secondary Boycott of Israel by Arab countries, which 50 U.S.C. App. Sec 2407(a) prohibits a United States person from taking.
- (c) Representation of Extent of Transportation by Sea. (This representation does not apply to solicitations for the direct purchase of ocean transportation services).
 - (1) The Offeror shall indicate by checking the appropriate blank in paragraph (c)(1) of this provision whether transportation of supplies by sea is anticipated under the resultant contract. The term "supplies" is defined in the Transportation of Supplies by Sea clause of this solicitation.
 - (2) Representation.

The Offeror represents that it

______ Does anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

______ Does not anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

(3) Any contract resulting from this solicitation will include the Transportation of Supplies by Sea clause. If the Offeror represents that it will not use ocean transportation, the resulting contract will also include the Defense Federal Acquisition Regulation Supplement clause at 252.247-7024, Notification of Transportation of Supplies by Sea.

(End of provision)

DFARS 252.225-7000 BUY AMERICAN ACT -- BALANCE OF PAYMENTS PROGRAM CERTIFICATE.

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"Domestic end product," "qualifying country," "qualifying country end product," and "nonqualifying country end product" have the meanings given in the Buy American Act and Balance of Payments Program clause of this solicitation.

(b) Evaluation.

Offers will be evaluated by giving preference to domestic end products and qualifying country end products over nonqualifying country end products.

- (c) Certifications.
 - (1) The Offeror certifies that --
 - (i) Each end product, except those listed in paragraphs (c)(2) or (3) of this clause, is a domestic end product; and
 - (ii) Components of unknown origin are considered to have been mined, produced, or manufactured outside the United States or a qualifying country.
 - (2) The Offeror certifies that the following end products are qualifying country end products:

Qualifying Country End Products

Line Item Number		Country of Origin (If known)
(List only qualifying country end products.) (3) The Offeror certifies that the following end products are nonqualifying country end products:		(List only qualifying country end products.)
		ertifies that the following end products are nonqualifying country end
		Nonqualifying Country End Products
Line Item Number		Country of Origin (If known)
		(End of provision)

Technical Specifications for UV Mask Aligner

1) General Requirements

- 1.1) <u>Scope</u> This specification describes the minimum technical requirements and performance standards for a large area ultraviolet (UV) mask alignment and exposure system to be installed by the contractor at the Naval Research Laboratory (NRL), Washington DC. The system will be used by NRL personnel for research and fabrication of microcircuits and microstructures required by researchers in evolving programs at NRL. These programs range from research in submicron patterning for Integrated Circuit (IC) fabrication to back end production of multichip modules with circuitry on both sides of a substrate. As such, the system must be expandable to adapt to changing research needs. System design must be modular to readily accommodate future upgrades.
- 1.2) Installation Site The contractor shall install the system in Bldg. 30 of the Naval Research Lab, Washington DC, in a class 1000 cleanroom, at a location to be designated by the Contracting Officer's Representative. The laboratory space will have 110 VAC or 220 VAC single phase 60 Hz electrical power. Other available utilities include compressed N_2 (75 lbs/sq.in.) and water. The contractor shall hook up the system to the utilities in the laboratory and install the system in a manner consistent with cleanroom operating procedures.
- 1.3) <u>Description and Primary System Components</u> The photolithographic mask aligner is to be used to transfer mask-defined patterns to substrates using photolithography. This process uses ultraviolet light to define a pattern in a photoresist on a substrate, allowing subsequent pattern transfer to the substrate. The system will be used in a cleanroom by a limited number of trained operators. The system is composed of three main components, as follows:
 - (1) A mechanical system supporting the mask and substrate and allowing alignment between the two.
 - (2) A microscope and closed circuit television system to measure alignment of mask and substrate.
 - (3) an optical exposure system capable of delivering a fixed dose of patterned UV irradiation to the substrate.

The required performance specifications for the system, (which must be present as-delivered and not as an add-on), are as follows:

2) Mechanical Alignment Subsystem

- 2.1) <u>Vibration Isolation</u> The system is to be equipped with vibration isolation table.
- 2.2) <u>Sample Size</u> The mask aligner must be capable of handling a variety of sample sizes and shapes, including (but not limited to) 2", 3", 4" and 6" wafers up to 3 mm thick and of handling square samples having dimensions up to 6" x 6" with thickness ranging from 1 mm to 3 mm. Multiple

PAGE 2

sample holders are allowed to meet this specification. It should take no more than 5 minutes for NRL users to change sample or mask holders.

- 2.3) <u>Mask Holder</u> The system must possess a mask loading station for easy and efficient mask change. No tools should be required to allow for easy maskholder and chuck size change. The mask aligner must accept 3, 5 and 7 in. sq. glass and quartz masks and retain the mask with a vacuum holder. A separate switch to actuate vacuum for the mask is required. Vacuum to the holder is to be retained even if instrument power is off.
- 2.4) <u>Mask Alignment</u> The system must allow relative mask/sample motion in x,y and theta directions. Alignment stage x, y and theta directions must have travel ranges of at least:

x	у	theta
+/- 5 mm	+/- 5 mm	+/- 5 deg

Accuracy of x and y motion must be 0.5 micron or better. Positioning is to be micrometer driven. The system must be automatically corrected for mask/sample nonplanarity between mask and substrate by a wedge compensation system.

- 2.5) <u>Mask/Substrate Separation</u> The mask aligner must allow a continuously variable separation in the z direction with a minimum range of at least 300 microns to allow for alignment positioning. Mask to sample separation must be met for the range of substrates specified in section 2.
- 2.6) <u>x-y Shift</u> The shift in x and/or y direction occurring as a result of motion over range of z must be less than 0.1 micron.

2.7) Contact Modes

- 2.7.1) System must be capable of continuously adjustable 1-300 micron alignment gaps.
- 2.7.2) Exposure modes must include proximity, soft, vacuum and hard contact modes. In proximity, exposure gap must be adjustable from 1 to 100 microns. The force applied during soft contact mode shall be externally adjustable. Contact pressure in hard contact shall be provided by a continuously adjustable throttle valve with a range from 0 to a maximum pressure sufficient to maintain continuous contact. A pressure gauge is required to to display a readout of pressure at mask/substrate interface in hard contact and chamber vacuum in vacuum contact mode.

3) Optical Alignment Subsystem

3.1) <u>General Description</u> The mask aligner is to be equipped with a normal field microscope and high resolution CCTV for viewing the mask/sample alignment. The microscope requires a four turret objective assembly.

- 3.2) <u>Magnification</u> Overall magnification range of the microscope/CCTV system must be from 50X (nominal) to a maximum of 1000X. The depth of focus at 500X must be a minimum of 2 microns, corresponding to a resolution of 0.5 micron in the x-y plane.
- 3.3) Positional Range The microscope/CCTV system must be capable of independent motion in the x-y plane. A minimum travel of \pm 25 mm in the x and y directions, with the mask centerpoint as origin, is required.
- 3.4) <u>Alignment to Stored Image</u> The system must be capable of digital image capture for mask/wafer alignment by overlay of mask and stored image.
- 3.5) <u>Back Side Alignment</u> For patterning both sides of a substrate, the system must also be capable of bottom side alignment (BSA), employing the same image storage method as with Top Side Alignment (TSA). Choice of TSA or BSA must be possible without component changeover

4) Exposure Subsystem

- 4.1) <u>UV Source Requirements</u> The mask aligner is to utilize a high pressure mercury lamp, rated at a minimum of 350 W, and a power supply capable of operation at 110 VAC, 60 Hz power. The lamp housing must be capable of upgrade up to 1000 W for thick resist work.
- 4.2) <u>UV Spectra Range</u> On installation, the mask aligner is to be configured to operate in the UV region, providing spectral power in the range of 365-405 nm. It must be possible to be modified by the operators at NRL (without a contractor visit) for operation in the 280-350 nm region.
- 4.3) Beam Uniformity UV exposure optics must be capable of full field exposure of area up to 6" x 6" in. square. The beam intensity variation is to be less than 3% over a 5 in. diameter area and less than 5% over a 6" diameter area, measured in the mask plane.
- 4.4) <u>Exposure Timer</u> The exposure cycle is to be automatic, activated by a simple switch or button, and time programmable between 0.1 and 999 seconds.
- 4.5) <u>Intensity Control</u> The UV beam intensity variation must be less than <u>+</u> 2%_during exposure.
- 4.6) <u>Intensity Meters</u> An intensity meter is to be included that monitors and displays UV source intensity during exposure. The meter is to be sensitive to radiation between 365-405 nm. A separate intensity meter is to be provided to measure intensity in the same spectral range at various points in the wafer plane.
- 4.7) <u>Exposure Repeatability</u> Exposure repeatability, measured as the standard deviation in UV intensity between exposures, is not to exceed 2%. This will be measured from a set of 20 exposures taken at 10 minute intervals over a 4 hour period.

- 4.8) <u>Resolution</u> The line resolution must be 0.6 microns or less, employing the 365-405 nm with vacuum contact, over the central 6 inch diameter area.
- 4.9) <u>Cold-Light Mirror</u>. The exposure system should include a cold light mirror to minimize substrate heating.

5) Miscellaneous

- 5.1) <u>Control System</u> All equipment must be compatible with cleanroom operation. The control system must be operable through a cleanroom compatible keypad. The exposures should be directed by a control system capable of storing at least 10 exposure/alignment programs. The system's control unit must show display all system operating parameters. All system operational keys and buttons must be within easy operator access.. An Emergency-Off Switch must be located within easy reach of operator.
- 5.2) <u>Manuals and Other Documentation</u> One complete set of operating and technical manuals including, full instructions for all system hardware, must be provided. Schematics, diagrams and drawings of the mask aligner must also be provided. See Exhibit A for details.
- 5.3) <u>Special Tools</u> Special tools required for normal operation or maintenance are to provided by the contractor.
- 5.4) <u>Warranty</u> The contractor must offer the government at least the same warranty terms as offered in its standard commercial contracts.
- 5.5) <u>Training</u> The contractor is responsible for training a small group of users (up to 6 people) at NRL for full use and capability of the mask aligner. A minimum of 4 hours will be scheduled to meet this requirement.

6) Upgrade Capability

As noted above, the system design must be modular to allow upgrades to readily accommodate evolving research needs. Such upgrades must include :

- 6.1) <u>Spectral Range</u> It must be possible to upgrade the optical system (without a contractor visit) for operation in the 280-350 nm region, with achievable resolution of 0.5 micron or less.
- 6.2) <u>Alignment Gap</u> System must be upgradeable to a gap alignment of no less than 20 microns for substrates with high topography.
- 6.3) <u>Microscope</u> Multiple microscope options must be available for different alignment needs.

CONTRACT DATA REQUIREMENTS LIST

Form Approved OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 440 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jafferson Devis Highway, Suite 1204, Arthagton, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, OC 20503. Please DO NOT RETURN your form to either of these addresses. Send completed form to the Government Issuing Contracting Officer for the Centract/PR No. listed in Block E. C. CATEGORY: B. EXHIBIT A. CONTRACT LINE ITEM NO. 0002 DTHER F. CONTRACTOR E. CONTRACT / PR NO. D. SYSTEM / ITEM **UV MASK ALIGNER** 17. PRICE GROUP 3 SURTITLE 1. DATA ITEM NO. 2. TITLE OF DATA ITEM TECHNICAL MANUAL A001 8. ESTIMATED B. REQUIRING OFFICE 5. CONTRACT REFERENCE 4. AUTHORITY (Data Acquisition Document No.) TOTAL PRICE NRL CODE 6950 SOW PARA. 5.2 12. DATE OF FIRST SUBMISSION 18. FREQUENCY DISTRIBUTION 7. OD 250 REQ 9. DIST STATEMENT 14 REQUIRED b. COPIES 0 TIME LT 13. DATE OF SUBSEQUENT 11. AS OF DATE a. ADORESSEE B. APP CODE Draft 201 DAC 0 NRL CODE 6950 18. REMARKS ONE COMPLETE SET OF OPERATING AND TECHNICAL MANUALS INCLUDING FULL INSTRUCTIONS FOR ALL SYSTEM HARDWARE 0 15. TOTAL 17. PRICE GROUP 3. SUBTITLE 2. TITLE OF DATA ITEM 1. DATA ITEM NO. SCHEMATICS AND DRAWINGS A002 8. REQUIRING OFFICE 18. ESTIMATED 5. CONTRACT REFERENCE 4. AUTHORITY (Date Acquis TOTAL PRICE NRL CODE 6950 SOW PARA. 5.2 12. DATE OF FIRST SUBMISSION 16. FREQUENCY DISTRIBUTION 7. DD 258 REQ 8. DIST STATEMENT REQUIRED b. COPIES O TIME LT 13. DATE OF SUBSEQUENT 11. AS OF DATE a. ADDRESSEE 8. APP CODE Draft Reure 201 DAC NRL CODE 6950 0 1 16. REMARKS ONE FULL SET OF SCHEMATICS, DIAGRAMS AND DRAWINGS OF THE MASK ALIGNER 0 15. TOTAL 17. PRICE GROUP 3. SUBTITLE 1. DATA ITEM NO. 2. TITLE OF DATA ITEM 6. REQUIRING OFFICE 8 FSTIMATED 5 CONTRACT REFERENCE 4. AUTHORITY (Data Acquisition Document No.) TOTAL PRICE 12. DATE OF FIRST SUBMISSION DISTRIBUTION 14. 18. FREQUENCY 7. DD 250 REQ 9. DIST STATEMENT REQUIRED h. COPIES 13. DATE OF SUBSEQUENT SUBMISSION . ADDRESSEE 11. AS OF DATE B APP CODE Draft Reg 16. REMARKS 17. PRICE GROUP 3. SUBTITLE 2. TITLE BE DATA ITEM 1. DATA ITEM NO. 8. ESTIMATED B. REQUIRING OFFICE 5. CONTRACT REFERENCE 4. AUTHORITY (Data Acquisition Document No.) TOTAL PRICE 12. DATE OF FIRST SUBMISSION DISTRIBUTION 9. DIST STATEMENT 18. FREQUENCY 14. 7 DO 250 RED REQUIRED 6. COPIES 13. DATE OF SUBSEQUENT SUBMISSION 11. AS OF DATE a. ADDRESSEE Final 1. APP CODE 16. REMARKS

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G. PREPARED BY

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WAYNE A. CARRINGTON

DD Form 1423, JUN 90

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Pages

INSTRUCTIONS FOR COMPLETING DD FORM 1423

(See DoD 5010.12-M for detailed instructions.)

FOR GOVERNMENT PERSONNEL

- Item A. Self-explanatory.
- Item B. Self-explanatory.
- Item C. Mark (X) appropriate category: TDP Technical Data Package; TM - Technical Manual; Other - other category of data, such as "Provisioning," "Configuration Management", etc.
- Item D. Enter name of system/litem being acquired that data will support.
- Item E. Self-explanatory (to be filled in after contract award).
- Item F. Self-explanatory (to be filled in after contract award).
- Item G. Signature of preparer of CDRL.
- Item H. Date CDRL was prepared.
- Item I. Signature of CDRL approval authority.
- Item J. Date CDRL was approved.
- Item 1. See DoD FAR Supplement Subpart 4.71 for proper numbering.
- Item 2. Enter title as it appears on data acquisition document cited in Irem 4.
- Item 3. Enter subtitle of data item for further definition of data item (optional entry).
- Item 4. Enter Data Item Description (DID) number, military specification number, or military standard number listed in DoD 5010.12-L (AMSDL), or one-time DID number, that defines data content and format requirements.
- Item 5. Enter reference to tasking in contract that generates requirement for the data item (e.g., Statement of Work paragraph number)
- Item 6. Enter technical office responsible for ensuring adequacy of the data item.
- Item 7. Specify requirement for inspection/acceptance of the data item by the Government.
- Item 8. Specify requirement for approval of a draft before preparation of the final data item.
- Item 9. For technical data, specify requirement for contractor to mark the appropriate distribution statement on the data (ref. DoDD 5230.24).
- Item 10. Specify number of times data items are to be delivered.
- Item 11. Specify as-of date of data item, when applicable.
- Item 12. Specify when first submittel is required.
- Item 13. Specify when subsequent submittals are required, when applicable.
- Item 14. Enter addressees and number of draft/final copies to be delivered to each addressee. Explain reproducible copies in Item 16.
- Item 15. Enter total number of draft/final copies to be delivered.
- Item 16. Use for additional/clarifying information for Items 1 through 15. Examples are: Tailoring of documents cited in Item 4; Clarification of submittal dates in Items 12 and 13; Explanation of reproducible copies in Item 14.; Desired medium for delivery of the data Item.

FOR THE CONTRACTOR

- Item 17. Specify appropriate price group from one of the following groups of effort in developing estimated prices for each data item listed on the DB Form 1423.
- a. Group I. Definition Data which is not otherwise essential to the contractor's performance of the primary contracted effort (production, development, testing, and administration) but which is required by DD Form 1423.

Estimated Price - Costs to be included under Group I are those applicable to preparing and assembling the data item in conformance with Government requirements, and the administration and other expenses related to reproducing and delivering such data items to the Government.

b. Group II. Definition - Data which is essential to the performance of the primary contracted effort but the contractor is required to perform additional work to conform to Government requirements with regard to depth of content, format, frequency of submittal, preparation, control, or quality of the data item.

Estimated Price - Costs to be included under Group II are those incurred over and above the cost of the essential data item without conforming to Government requirements, and the administrative and other expenses related to reproducing and delivering such data item to the Government.

c. Group III. Definition - Data which the contractor must develop for his internal use in performance of the primary contracted effort and does not require any substantial change to conform to Government requirements with regard to depth of content, format, frequency of submittal, preparation, control, and quality of the data item.

Estimated Price - Costs to be included under Group III are the administrative and other expenses related to reproducing and delivering such data item to the Government.

d. Group IV. Definition - Data which is developed by the contractor as part of his normal operating procedures and his effort in supplying these data to the Government is minimal.

Estimated Price - Group IV items should normally be shown on the DD Form 1423 at no cost.

Item 18. For each data item, enter an amount equal to that portion of the total price which is estimated to be attributable to the production or development for the Government of that item of data. These estimated data prices shall be developed only from those costs which will be incurred as a direct result of the requirement to supply the data, over and above those costs which would otherwise be incurred in performance of the contract if no data were required. The estimated data prices shall not include any amount for rights in data. The Government's right to use the data shall be governed by the pertinent provisions of the contract.